

Clean School Bus Fleet Rule in SCAQMD



Public Workshop

April 7, 2005 - El Monte

9:30 AM - 12:00 Noon

California Environmental Protection Agency



Air Resources Board

Why Reduce Diesel Emissions?

- Diesel engines are long lived
- NO_x is an ozone precursor
- Diesel PM is a toxic air contaminant
- Children are especially vulnerable to health impacts

Health Impacts of Diesel Vehicles in California

- Annual health impacts
 - 2,900 premature deaths
 - 3,600 hospital admissions
 - 240,000 asthma attacks/respiratory symptoms
 - 600,000 lost days of work
- By comparison
 - 3,700 deaths from car accidents
 - 2,000 homicides

Why is the ARB Considering Clean School Bus Regulation?

- U.S. Supreme Court ruled that certain aspects of Rule 1195 are preempted by federal authority
- ARB and U.S. EPA determined Rule 1195 not appropriate for waiver without state adoption
- ARB agreed to evaluate four fleet rules, including Rule 1195 affecting school buses

ARB Regulatory Proposal Components

- Applicability: Public/private fleets with 15 or more school buses
- Purchase requirements: Best Engine Technology/Selection (BEST) for new purchases
- Exemptions: Similar to Rule 1195 with sunsetted exemptions added back in
- In-use diesel emission control requirements: staff evaluating implementation mechanism

External Funding Necessary

- Regulatory proposal cannot mandate costs on school districts which are not reimbursable
- External/incentive funding for incremental costs integral to implementation
- State/district incentive funding available determines mix of projects

Sources of Potential External Funding

- AB 923 \$2.00 fee increase
 - SCAQMD devoting \$14M minimum over next 18 months
- Carl Moyer Program for PM and NOx/PM retrofits
- Mobile Source Air Pollution Reduction Review Committee (MSRC)

Proposed Purchase Requirements

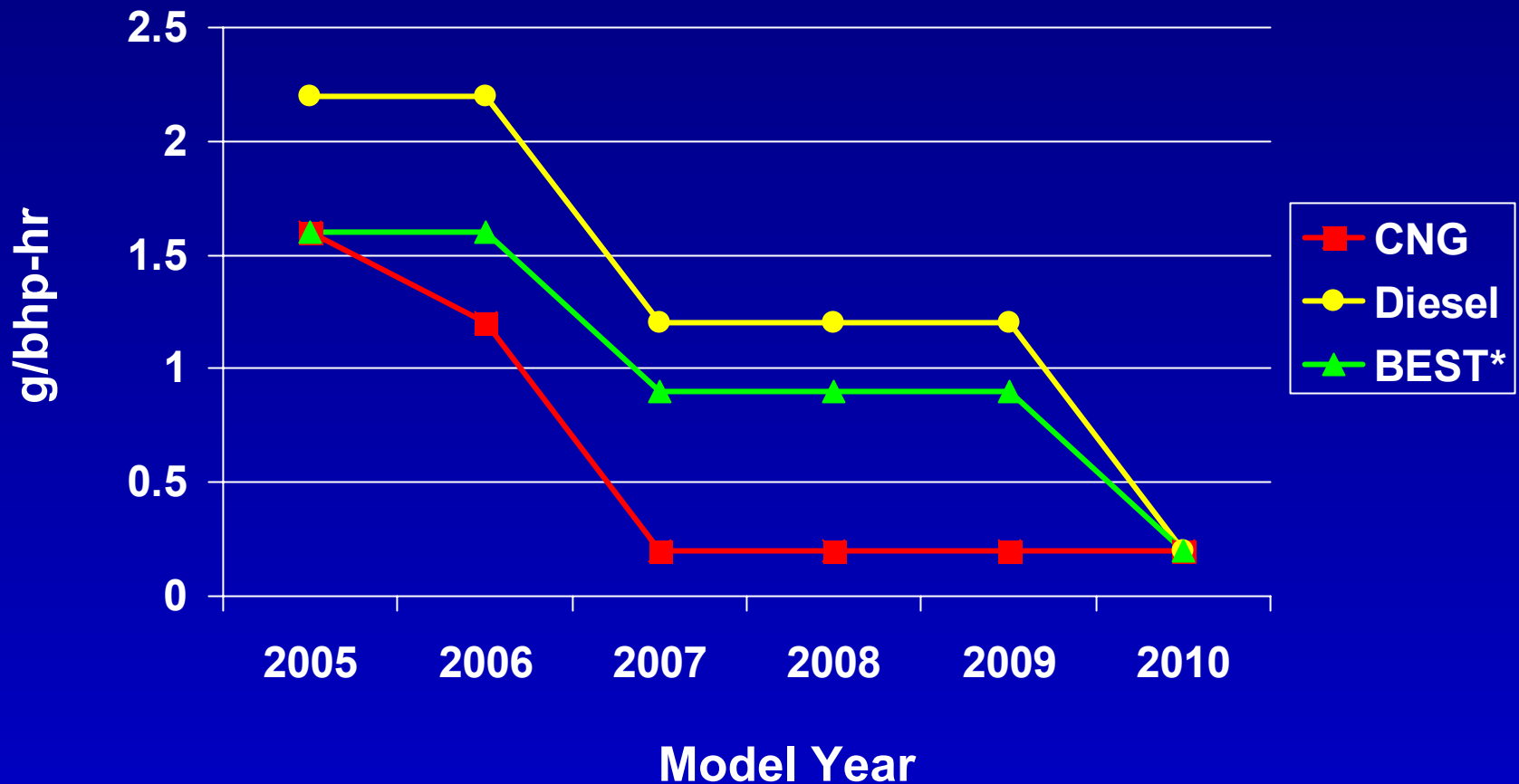
- New heavy-duty BEST:
 - New engine that meets proposed BEST criteria, OR
 - New engine with verified diesel emission control strategy that reduces NOx and PM emissions to proposed BEST criteria
- New medium-duty BEST:
 - Staff assessing requirements
- Provisions for pre-owned school bus purchases

BEST Criteria for Heavy-Duty Engines in School Buses

- 2005 - 2006 MY: 1.8 g/bhp-hr NO_x+NMHC (or lower) and 0.03 g/bhp-hr PM (or lower)
- 2007 - 2009 MY: NO_x FEL not to exceed {0.2 - 0.9} * g/bhp-hr and 0.01 g/bhp-hr PM
- 2010+ MY: 0.2 g/bhp-hr NO_x and 0.01 g/bhp-hr PM

*We are requesting comments on the value within this range that should be the upper allowable Family Emission Limit for NO_x.

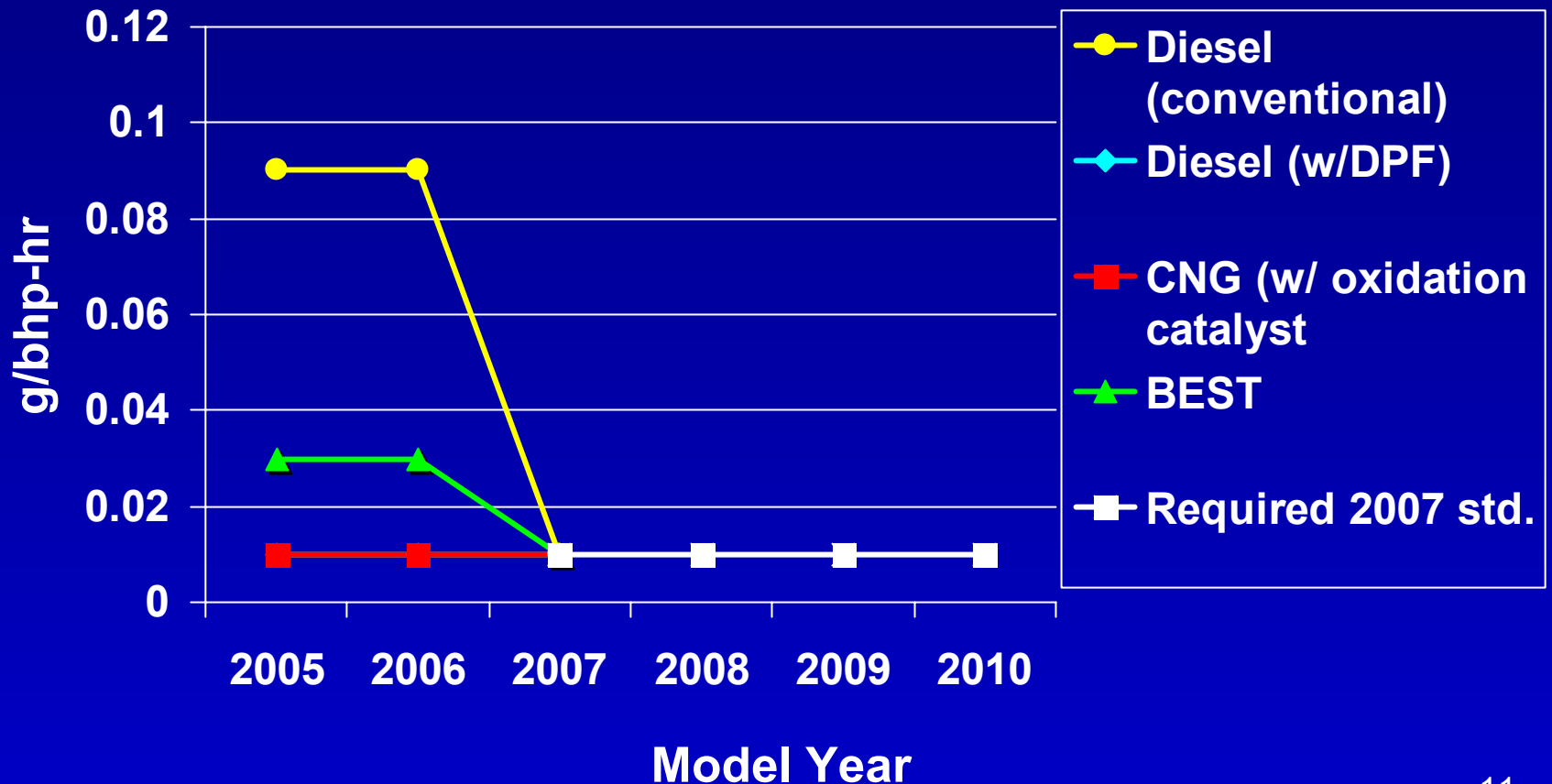
Anticipated NOx Certification Levels (Engines used in Heavy-Duty School Buses)



*In this graph, BEST NOx emission level is assumed to be 0.9 g/bhp-hr

PM Certification Levels

(Engines used in Heavy-Duty School Buses)



2005 - 2006 Model Year New Purchase Requirements

- Purchase BEST:
 - New school bus with BEST engine, OR
 - New school bus with diesel engine w/ verified emission control device reducing NOx/PM to BEST levels
- Purchase new diesel with DPF *IF* no funding for incremental BEST cost
- Purchase new conventional diesel *IF* no funding for incremental DPF cost

2007 - 2009 Model Year New Purchase Requirements

- Purchase BEST:
 - New school bus with BEST engine, OR
 - New school bus with diesel engine w/ verified emission control device reducing NOx to BEST levels
- Purchase new diesel meeting 2007 standards *IF* no funding for incremental BEST cost

2010 Model Year New Purchase Requirements

- Purchase BEST
- BEST for all fuel types = required emission standards in section 1956.8, title 13, CCR
 - 0.2 g/bhp-hr NO_x
 - 0.01 g/bhp-hr PM

Proposed Funding-Based Exemptions

May purchase new diesel bus IF external funding not available for:

- Incremental cost of BEST
- Building alt-fuel refueling station (capped at \$13K/bus), or no station available within 5 miles
- For maintenance facility upgrades for alt-fuel technology (proposal to include funding cap)
- Incremental cost of DPF (2005-2006 MYs)

Other Proposed Exemptions

- Lack of chassis/body configuration with BEST engine
- Field trips
- Unforeseen circumstances
- Mergers

Proposed In-Use Diesel Emission Control Strategies

- PM
 - Level 1 \geq 25% reduction
 - Level 2 \geq 50% reduction
 - Level 3 \geq 85% reduction or \leq 0.01 g/bhp-hr
- NOx
 - \geq 15% reduction verified in 5% increments
- Requesting comments on implementation mechanism

Calculated Benefits of Technology (Per Bus)

Based on 2005-2006 MY Requirements

	New CNG	New diesel w/verified NOx/PM device	DPF on in- use diesel
NOx Lifetime Reduction (tons)	0.60	0.20	N/A
PM Lifetime Reduction (tons)	0.06	0.03	0.005

Next Steps in Public Process

- Comments on draft regulatory language by 4/15/05, specifically:
 - Upper limit for NOx FEL for 2007-2009 MY requirements
 - Medium-duty purchase requirements
 - In-use diesel emission control implementation mechanism
- Staff report to be released by 6/03/05
- Board hearing on 7/21 - 7/22/05

Comments Requested

- E-Mail comments to:
 - Krista Fregoso, kfregoso@arb.ca.gov
and
 - Renee Kemena, rkemena@arb.ca.gov
- Or mail to: ARB, P.O. Box 2815,
Sacramento, CA 95812
- Or fax to: (916) 322-3923

How to Contact Us

- Clean School Bus Regulation contacts:
 - Renee Kemena at 916-327-7214 or rkemena@arb.ca.gov
 - Krista Fregoso at 916-445-5035 or kfregoso@arb.ca.gov
 - Lisa Jennings at 916-322-6913 or ljenning@arb.ca.gov
- Visit ARB's web site at:
<http://www.arb.ca.gov/msprog/scfleet/scfleet.htm>
- To receive automatic e-mail notification when new information is available, sign-up for ARB's list serve at: <http://www.arb.ca.gov/listserv/scfleet.htm>

Comments and Questions and Answers